Beamline 12.0.2.1: Coherent Soft X-Rays

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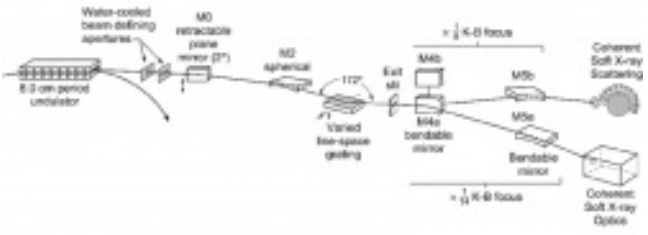
Beamline 12.0.2.1 provides tunable, spatially and spectrally coherent soft X-ray radiation for the purposes of characterizing novel x-ray optics. Using the third harmonic from an 8-cm period undulator, this branch delivers coherent soft X-rays with photon energies ranging from 200 to 1000 eV. The layout of the beamline is depicted below. The branchline consists of four mirrors and a monochromator. The first optic is a 2 horizontally deflecting planar mirror coated in gold which deflects the beam into beamline 12.0.2. The next is a spherical vertically deflecting mirror coated in iridium that focuses the source onto the exit slit. Next along the beam path is the monochromator composed of a varied line-space grating and an exit slit, enabling a bandwidth of as low as 0.1%. Lastly are two pairs of tungsten coated mirrors comprising the Kirkpatrick-Baez focus system for the two subbranches, one at 14 demagnification and the other 8 demagnification. The former is optimized for use at 500 eV and the latter at 800 eV. In each subbranch demagnification is equivalent in the horizontal and vertical directions.



Beamline 12.0.2.1 layout, from [1]. Click on the image to see the full size version. For further information please see the diffractive optics page and the publications list. *[1] Tunable coherent soft X-rays Rosfjord, K.M.; Yanwei Liu; Attwood, D.T.; Selected Topics in Quantum Electronics, IEEE Journal of Volume 10, Issue 6, Nov-Dec 2004 Page(s):1405 - 1413*